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Infectious hepatitis in diabetics. Sborn. ved. prac. lek. fak. Karlov. Univ. 8 no.5:575-578 '65.

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KUNC, Zdenek, Doc. MUDr; DULIK, Frantisek, MUDr

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(ARTERIES, CAROTID, fistula,
*carotid-cavernous, with contralateral exophthalmos)
(VEINS, CRANIAL SINUSES, fistula,
*carotid-cavernous, with contralateral exophthalmos)
(EXOPHTHALMOS,
*pulsating, with contralateral carotid-cavernous fistula)

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(Karaganda Basin—Coal mines and mining)
(Communist Youth League)

AUTHOR: Dulin, V.A., Foreman

91-58-6-26/39

TITLE: Fuse Testing Panel (Shchitok dlya proverki predokhraniteley)

PERIODICAL: Energetik, 1958, Nr 6, pp 26-27 (USSR)

ABSTRACT: The author describes a simple panel for testing fuses quickly and safely. Any insulating material may be used for the panel, which is fitted with a switch, transformer, signal lamp, a fuse box into which the fuse under test is screwed, and two copper bars at an angle for testing tubular fuses of various sizes. There is one circuit diagram.

AVAILABLE: Library of Congress

Card 1/1 1. Fuses (Electricity) - Test equipment

DULIN, V.A., insh.

Basic quality requirements in the design of low-voltage apparatus. Vest. elektroprom. 31 no.5:56-63 My '60. (MIRA 13:8)
(Electric apparatus and appliances)

21(7)

AUTHORS: Belov, S. P., Dulin, V. A., Kazanskiy, Yu. A., Kukhtevich, V. I., Tsypin, S. G. SOV/89-6-6-11/27

TITLE: Space and Energy Distribution of the Neutrons in Boron Carbide (Prostranstvennoye i energeticheskoye raspredeleniye neytronov v karbide bora)

PERIODICAL: Atomnaya energiya, 1959, Vol 6, Nr 6, pp 663 - 665 (USSR)

ABSTRACT: The authors report on investigations of space and energy distributions of 3 and 15 Mev neutrons in boron carbide. The 3 Mev neutrons were the product of the reaction $H^2(H^2,n)He^3$, the 15 Mev neutrons from $H^2(H^3,n)He^4$. The test arrangement (infinite geometry) is briefly described. Boron carbide ($\rho = 1.18 \pm 0.05$ g/cm^3; neutron detectors: 1) proportional counter with BF_3 enriched to 88% with B^{10}; 2) fission chamber with natural uranium, U^{235} (enriched to 75%), and Th^{232}; 3) threshold indicators: $P^{31}(n,p)Si^{31}$, $Al^{27}(n,p)Mg^{27}$, $Fe^{56}(n,p)Mn^{56}$, $Sb^{121}(n,2n)Sb^{120}$, $Cu^{63}(n,2n)Cu^{62}$, $In^{115}(n,\gamma)In^{116m}$. Figure 1 shows the space neutron distribution (3 and 15 Mev) in the passage through

Card 1/3

boron carbide. Detectors for the 3 Mev neutrons: 1) and 2), for the 15 Mev neutrons, 2) and 3). It was found among others that an increase of the threshold energy of the detector increases the inclination of the attenuation curves of the neutrons. In measuring the 15 Mev neutron attenuation by means of the indicator

$Cu^{63}(n,2n)Cu^{62}$ (E_{thresh} = 10.9 Mev) the relaxation path for the distance source - detector $R > 16$ cm does not change and is close to the transport path $\lambda_{tr} = 18 \pm 2$ cm. A comparison of the data contained in the present paper with those from reference 1 (Geneva Paper Nr 2147, 1958) is briefly discussed. The following relative capture figures are determined:

indicator: measurement	Cu^{63}	Sb^{121}	Fe^{56}	Al^{27}	P^{31}	In^{115}
by counter	6.5 ± 1	8 ± 2	1	0.73 ± 0.15	1.04 ± 0.15	-
by spectrometer	-	-	1	0.65 ± 0.15	-	6 ± 2

Card 2/3

Figure 2 shows the energy distribution of the neutron flux in boron carbide for different intervals (energy interval 1.5 - 15 Mev, results standardized in the interval 13.5-15 Mev). Moreover, the ratio between $\sigma_{U\ 235}(E_{eff})$ and $\sigma_{B\ 10}(E_{eff})$ of the reaction (n,α) with B^{10} in boron carbide was determined. In the case of 3 Mev neutrons 0.97 ± 0.03 was obtained at E_{eff} = 120±10 kev. In conclusion, the authors thank I. I. Bondarenko for advice and discussions, N. D. Proskurnina, V. F. Bashmakov, A. N. Nikolayev, and V. I. Popov for assistance in the experiments as well as A. N. Serbinov and I. A. Vorontsov for work at the neutron generator. There are 2 figures, 1 table, and 4 references, 2 of which are Soviet.

SUBMITTED: January 6, 1959

84233

26.2241
21.1700

S/089/60/009/004/013/020
B006/B070

AUTHORS: Dulin, V. A., Kazanskiy, Yu. A., Mashkovich, V. P., Panov, Ye. A., Tsypin, S. G.

TITLE: Investigation of the Attenuation Functions for Water Exposed to Isotropic and Highly Collimated Sources of Fission Neutrons

19

PERIODICAL: Atomnaya energiya, 1960, Vol. 9, No. 4, pp. 315 - 317

TEXT: In this "Letter to the Editor", the authors report on an experimental investigation of the space distribution of fission neutrons in water, the source of neutrons being a BP-5 (BR-5) reactor. The neutrons came out of a hole in a concrete shield (diameter 250 mm) and fell on a tank (137·139·217 cm) filled with doubly distilled water. The neutron beam had a total angular divergence of ~5°. The neutrons were detected by proportional boron counters. Measurements could be made at each point of the tank, and the position of the point could be determined with an accuracy of 1 mm. Fig. 1 shows the geometry. Figs. 2 and 3 show the measured neutron distributions for different values of r (distance from

Card 1/3

the source) and different values of h (distance from the beam). Fig. 4 shows the attenuation function of neutrons of an isotropic point source multiplied by r^2 (curve a), and the attenuation function of a highly collimated plane source (b). The maximum error of the curve a occurs for small r (r = 40 cm, ~20%), and the minimum error (~5%) occurs for large r. The error of the curve b is between ~5% for r = 40 cm and ~20% for r = 140 cm. The two curves diverge from each other by about 20%, but this is within the limits of the error of measurement. Therefore, for thicknesses of water shield larger than 40 cm, the two curves may be considered to be coincident. Fig. 5 shows, for comparison, the experimentally obtained (Ref. 2) attenuation functions for neutrons of an isotropic disk source (diameter 71.2 cm). The attenuation functions according to which the curves are drawn read:

$$G_{point}(r) = C_1 \int_0^{\pi/2} N(r,\theta)\sin\theta d\theta; \quad G_{plane}(r) = C_2 \int_0^{\infty} N(r,h)h\, dh; \text{ and}$$

84233

Investigation of the Attenuation Functions for Water Exposed to Isotropic and Highly Collimated Sources of Fission Neutrons

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$D_{disk}(r,a) = 2\pi \int_{r}^{\sqrt{r^2+a^2}} G_{point}(R)R\,dR$. a is the radius of the disk; N(r,θ) and N(r,h) are the distribution functions shown in Figs. 2 and 3; and the C_i are constants. The authors thank O. I. Leypunskiy and V. V. Orlov for discussions and comments. There are 5 figures and 4 references: 2 Soviet and 2 US.

SUBMITTED: April 27, 1960

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Card 3/3

84234

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S/089/60/009/004/014/020
B006/B070

AUTHORS: Dulin, V. A., Mashkovich, V. P., Panov, Ye. A., Taypin, S.G.

TITLE: Energy Distribution of Fast Fission Neutrons in Water

PERIODICAL: Atomnaya energiya, 1960, Vol. 9, No. 4, pp. 318 - 319

TEXT: The authors report on an experimental investigation of the energy distribution in water of fission neutrons from EP-5 (BR-5) reactor. The experimental arrangement is described in Ref. 5. The fast neutrons were detected by threshold indicators which had the form of disks of a diameter of 35 mm and different thicknesses. Data referring to these indicators are given in a table. The disks were oriented at different angles θ with the direction of the incident neutron beam, and placed at different distances h from the beam. Fig. 1 shows the activity of the indicators as a function of θ for r = 30 cm (normalized at θ = 9°). Fig.2 shows the activity of phosphorus indicators as a function of h for r = 30 cm, and r = 60 cm (normalized at h = 0). Fig. 3 shows the energy distribution of neutrons in water at distances of 30 and 60 cm, calculated from the geometry of the experiment for a point source. The neutron

Card 1/3

spectrum is obtained from a solution of the system of equations $N_i(r)$

$$= c\varepsilon_i\left[1-\exp(-\lambda_i T)\right].\exp(-\lambda_i t)\int_{E_{t_i}}^{\infty}\Phi(r,E)\sigma_i(E)dE$$

$$= c\varepsilon_i\left[1-\exp(-\lambda_i T)\right]\exp(-\lambda_i t)\sum_{j=1}^{n}\Phi_j(r,\bar{E})\sigma_{ij}(E)\Delta E_j$$ by the method of successive approximations. Here, $N_i(r)$ denotes the activity of the i-th threshold indicator at a distance r from the source after irradiating the indicator for a time T and then waiting for a time t; ε_i is the efficiency of the recording of the activity of the indicator including the correction for absorption and scattering in the sample, air, and counter window; $\sigma_i(E)$ is the reaction cross section at energy E; $\Phi(r,E)$ is the differential neutron flux of energy E at a distance r from the source; c is a constant; i is the index of the indicator (i = 1,2,..n); and j is the index of the

Energy Distribution of Fast Fission Neutrons in Water

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energy range. $N_i(r)$ is calculated from the formula $N_i(r)=c_1\int_0^{\pi/2} N_i(r,\theta)\sin\theta d\theta$, where $N_i(r,\theta)$ is the activity of the i-th threshold indicator at a distance r and an angle θ; c_1 is a constant. The relative ε_i values were determined experimentally for each indicator. Fig. 3 gives a comparison of the data obtained with the calculated neutron spectrum (Ref. 1) (normalized at r = 30 cm). The divergences between the two lie between 30 and 50%, which is practically within the limits of error (~30%). The authors thank O. I. Leypunskiy and V. V. Orlov for discussions and comments. There are 3 figures and 6 references: 3 Soviet and 3 US.

SUBMITTED: April 27, 1960

Card 3/3

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E032/E114

26.2242

AUTHORS: Dulin, V.A., Kazanskiy, Yu.A., Kuznetsov, V.F., and Smirenkin, G.N.

TITLE: A single-crystal, fast neutron scintillation spectrometer with discrimination against gamma-rays

PERIODICAL: Pribory i tekhnika eksperimenta, 1961, No.2, pp.35-41

TEXT: The transformation of the amplitude distribution due to recoil protons into the neutron energy spectrum in the case of a small crystal (negligible multiple neutron scattering) for which the light output depends linearly on the proton energy, can easily be carried out by differentiating the experimental spectrum. In fact, in the case of stilbene which was used by the present authors the relation is not linear and small crystals cannot be used if an adequate counting efficiency is to be obtained. The light output due to recoil protons and the form of the amplitude distribution due to monoenergetic neutrons was investigated using a Van de Graaf generator and the $T(p,n)He^3$, $D(d,n)He^3$ and $T(d,n)He^4$ reactions. Neutron energies in the following ranges could thus be obtained: 0.3-3.5, 4-7.5 and

Card 1/ 7

A single-crystal, fast neutron scintillation spectrometer with discrimination against gamma-rays

17-22 Mev respectively. The amplitude distributions due to recoil protons for 4.3 and 16.8 Mev neutrons are shown in Fig.1. The recoil-proton energy distribution P(E) can be obtained from the amplitude distribution $\Phi(V)$ with the aid of the following relation:

$$\Phi(V)dV = P(E)dE,$$

$$P(E) = \Phi[V(E)] \frac{dV}{dE} = F(E) \frac{dV}{dE} \qquad (1)$$

The functions V(E) and dV(E)/dE which are necessary to compute the neutron spectra are shown in Fig.2. The experimental values of V(E) are well represented by the Birks theory (Ref.1) according to which

$$V(E) = \int_0^E \frac{dV}{dE'} dE' = \text{const} \int_0^E \frac{dE'}{1 + kB \cdot dE'/dx} \qquad (3)$$

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E032/E114

A single-crystal, fast neutron scintillation spectrometer with discrimination against gamma-rays

If dE'/dx is expressed in Mev/cm of the range in air then kB turns out to be 20 cm/Mev. Fig.3 shows the recoil proton spectra for 1.0, 1.8 and 3.6 Mev neutrons. These curves were obtained with a cylindrical stilbene crystal (30 mm diameter, 15 mm long). The curves have a hump at the high energy end which is due to multiple neutron scattering. The latter effect is small for neutron energies greater than about 2 Mev. It can therefore be neglected at the higher energies. Fig.4 shows the energy dependence of the resolution of the single-crystal spectrometer. The resolution in the energy range 1-22 Mev can be described by the formula:

$$\Delta E_n/E_n = 20/\sqrt{E_n}\ \%$$

The efficiency of the spectrometer η can be described by:

$$\eta(E_n) = \frac{1 - \exp\left[-\Sigma(E_n)d\right]}{E_n}\ \Delta E \qquad (4)$$

Card 3/7

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E032/E114

A single-crystal, fast neutron scintillation spectrometer with discrimination against gamma-rays

where ΔE is the differentiation step for the recoil proton distribution. The efficiency for the above stilbene crystal was found to be about 3% at 2 Mev and about 0.5% at 10 Mev (the differentiation step was taken to be equal to the energy resolution ΔE_n). The discrimination against gamma rays is based on the differences in the effective scintillation decay constant for neutrons and gamma rays. The present authors have used the scheme suggested by Birks and described in detail by F.D. Brooks in Nucl. Instrum. and Methods, 1959, 4, 151 (Ref.5). Fig.13 shows neutron spectra for a Po-Be source (curve 1 - present results, curves 2 and 3 due to B.G. Whitmore and W.B. Backer (Ref.7: Phys.Rev., 1950, 78, 799) and J.O. Elliot and W.I. McGarry and W.R. Faust (Phys.Rev., 1954, 93, 1348, Ref.8). It is stated that the overall efficiency for neutrons having an energy of 2 Mev has been increased to about 10%. The gamma ray efficiency is lower by a factor of 100. Acknowledgements are expressed to L.D. Gordeyev, Yu.I. Baranov, V.I. Bol'shov and

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E032/E114

A single-crystal, fast neutron....

Yu.V. Pankrat'yev for assistance in this work.
There are 14 figures and 9 references: 2 Soviet and 7 English.
SUBMITTED: June 26 1960

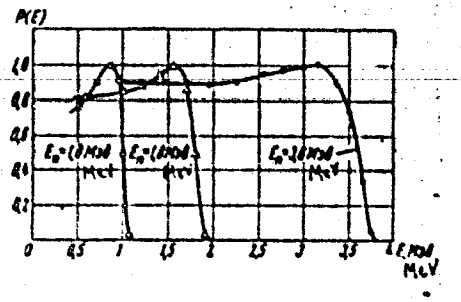

Fig. 3

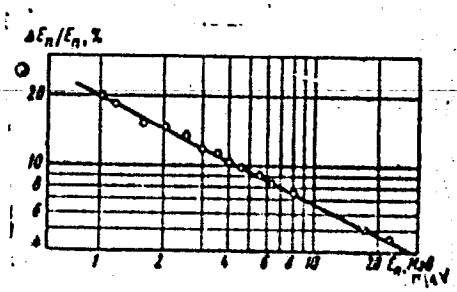

Fig. 4

Card 5/7

A single-crystal, fast neutron .....

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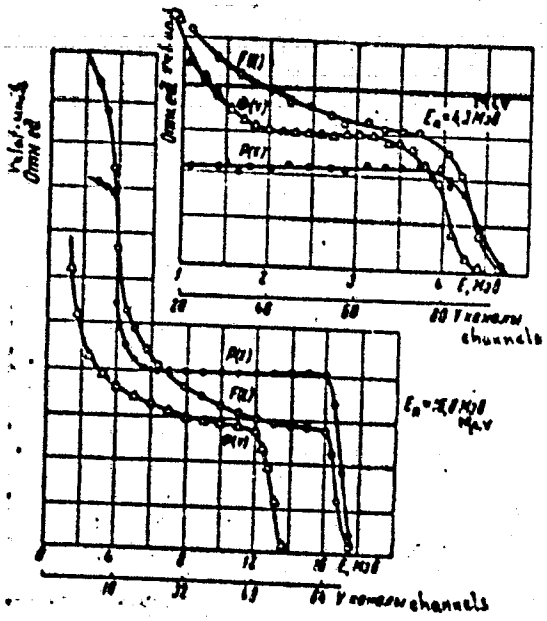


Fig.1

Card 6/7

A Single-crystal, fast neutron....

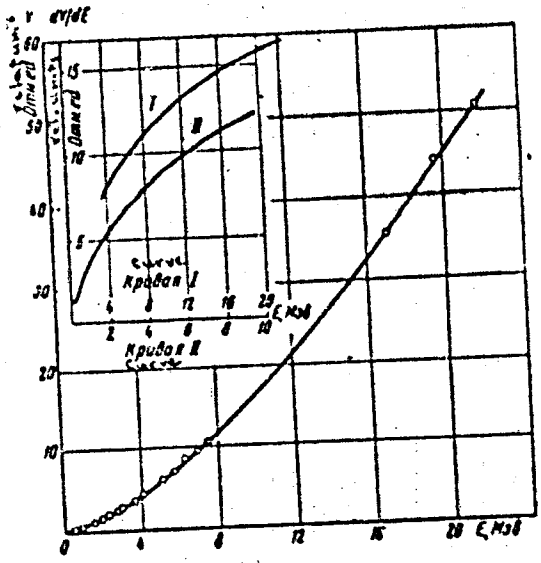


Fig. 2

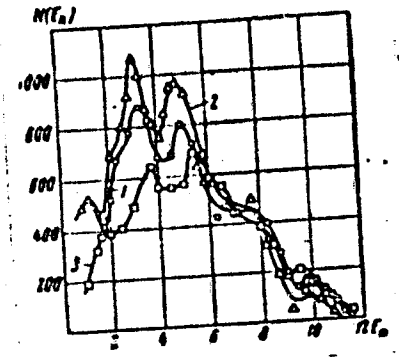


Fig.13

Card 7/7

ACCESSION NR: AT4019059 S/0000/63/000/000/0251/0260

AUTHOR: Dulin, V. A.; Kazanskiy, Yu. A.; Matusevich, Ye. S.

TITLE: Experimental methods for the study of shielding (radiation detector)

SOURCE: Voprosy* fiziki zashchity* reaktorov; sbornik statey (Problems in physics of reactor shielding; collection of articles). Moscow, Gosatomizdat, 1963, 251-260

TOPIC TAGS: nuclear reactor, reactor shielding, scintillation counter, radiation dosimetry, relative biological effectiveness, Monte Carlo method, radiation shielding, radiation detector, neutron spectrum, Gamma ray spectrum, neutron distribution, Gamma ray distribution, radiometry

ABSTRACT: The authors call attention to the need for the study not only of the total radiation dosage behind the shielding, in connection with the development of nuclear power, but also of its more detailed characteristics (e.g., the spatial and energy distribution of the neutrons and gamma-rays in the shielding, the angular and energy distribution of the neutrons and gamma-rays on the surface of the shielding, etc.). At the present time, practically all the modern means of radiation recording are used to investigate the spatial, energy and

Card 1/4

ACCESSION NR: AT4019059

angular distributions of penetrating radiation in the shielding. The various requirements levied on sensors of ionizing radiation are reviewed. The point is made that in the problem of the passage of radiation within shielding, exhaustive information is contained in the angular energy distribution at each point in space with different geometries, the anisotropy functions and the energy levels of the radiation sources. It is noted that for the development of computation methods, comparatively incomplete information such as the spatial distribution of the dosage of gamma-rays and neutrons in the shielding, the behavior of neutron streams having energy levels above a certain threshold, the angular distribution of streams of gamma-rays and neutrons on the surface of the shielding, etc. is of extremely great value in that it permits the application, when studying shielding, of very simple but nonetheless effective methods involving the use of dosage and fission chambers, threshold indicators and the like. The measurement of integral characteristics is considered with special attention to the problems of gamma-ray and neutron dosage determination. The use of miniature ionization chambers is discussed and their characteristics are described. Dosimetric instruments, including scintillation counters, are analyzed in the light of their expectable performance in typical applications. A fundamental shortcoming of such devices

ACCESSION NR: AT4019059

is shown to be their inability to measure gamma-ray doses when neutrons are present. The method of pulse amplitude summing as a technique for enhancing the operational properties of the scintillation dosimeter is described. The fiber-equivalent polyethylene proportional detector (for neutron dosage measurements) is described and its operational principle analyzed. The concept of the "relative biological effectiveness" of neutrons as a function of their energy is discussed, and the difficulties encountered in its precise measurement are outlined. A section of the article is devoted to the measurement of neutron streams, in which it is pointed out that the technology of measuring the spatial distributions of such streams in the shielding does not differ essentially from the measurement of flow conditions encountered in the solution of other problems. The differences that do exist, in terms of sensitivity requirements and other instrumentation parameters, are noted. The authors note that gamma-ray spectral distribution studies are currently being pursued in two fundamental directions: (1) acquisition of data with respect to the spectra of the sources of gamma-radiation (for example, the reactor, the volumetric sources of gamma-rays, etc.); and (2) measurement of the angular and spectral distributions at the boundary of the medium, which also describe the radiation sources and, on the other hand, are absolutely indispensable for the computation of shadow shielding and the passage of

Card 3/4

ACCESSION NR: AT4019059

gamma-rays in heterogeneous media; that is, in those problem areas which do not as yet lend themselves to analytical computations. Various methods used in this connection are discussed; among them, certain experimental techniques involving the determination of the form of the amplitude distribution of the pulses, the "random test method" (Monte Carlo method), and the use of spectrometers with NaI (T1) crystals. The final section of the paper deals with the problem of neutron spectra measurements, and the techniques and instruments suitable for such investigations. "The authors express their deep gratitude to A. I. Abramov, V. I. Kukhtevich, V. P. Mashkovich, V. I. Popov, B. I. Sinitsy*n and S. G. Tsy*pin for their valuable contributions to this work".

ASSOCIATION: none

SUBMITTED: 14Aug63 DATE ACQ: 27Feb64 ENCL: 00

SUB CODE: NP NO REF SOV: 019 OTHER: 015

Card 4/4

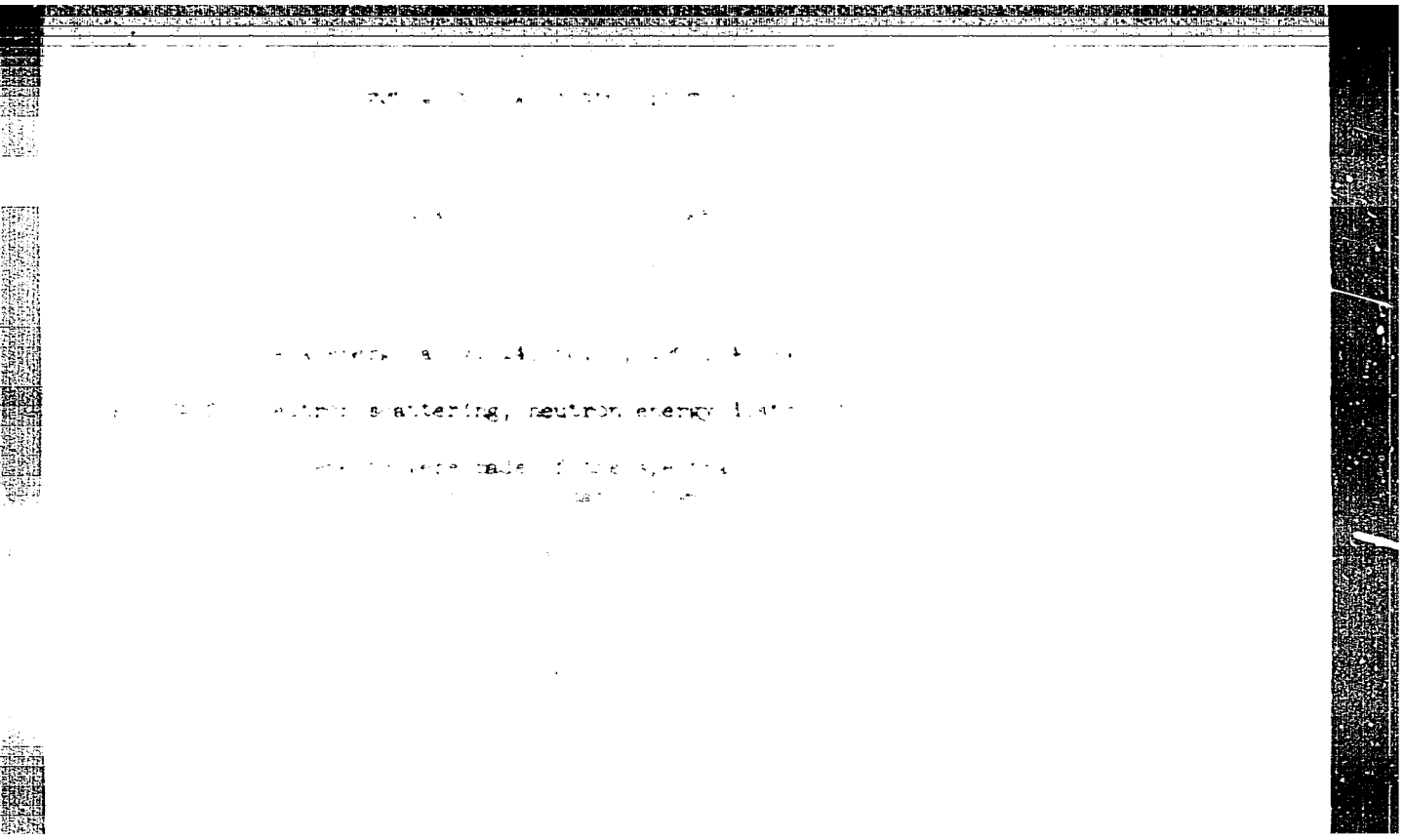
DULIN, V.A.
AID Nr. 977-6 27 May

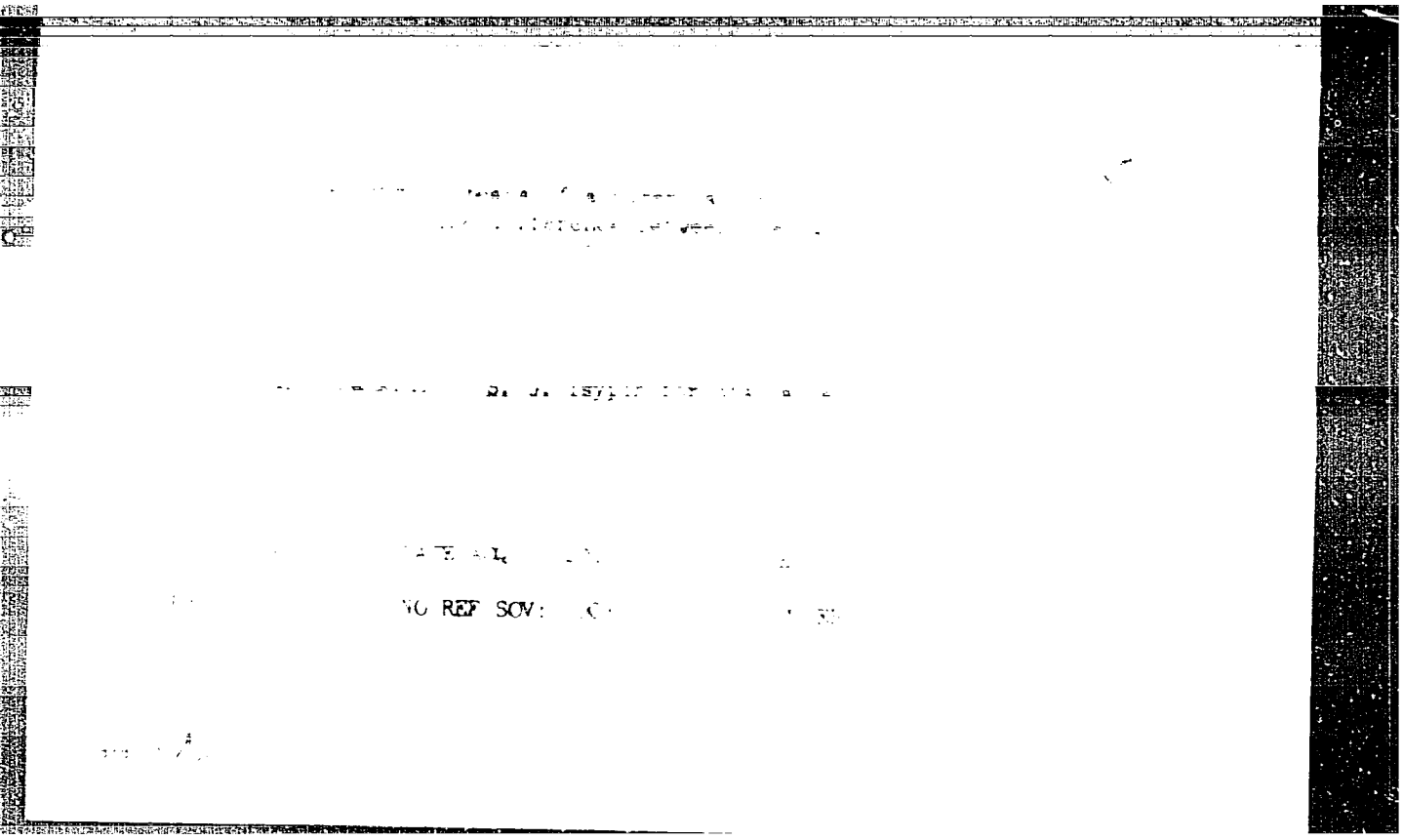
ENERGY DISTRIBUTION OF SCATTERED NEUTRONS IN WATER (USSR)

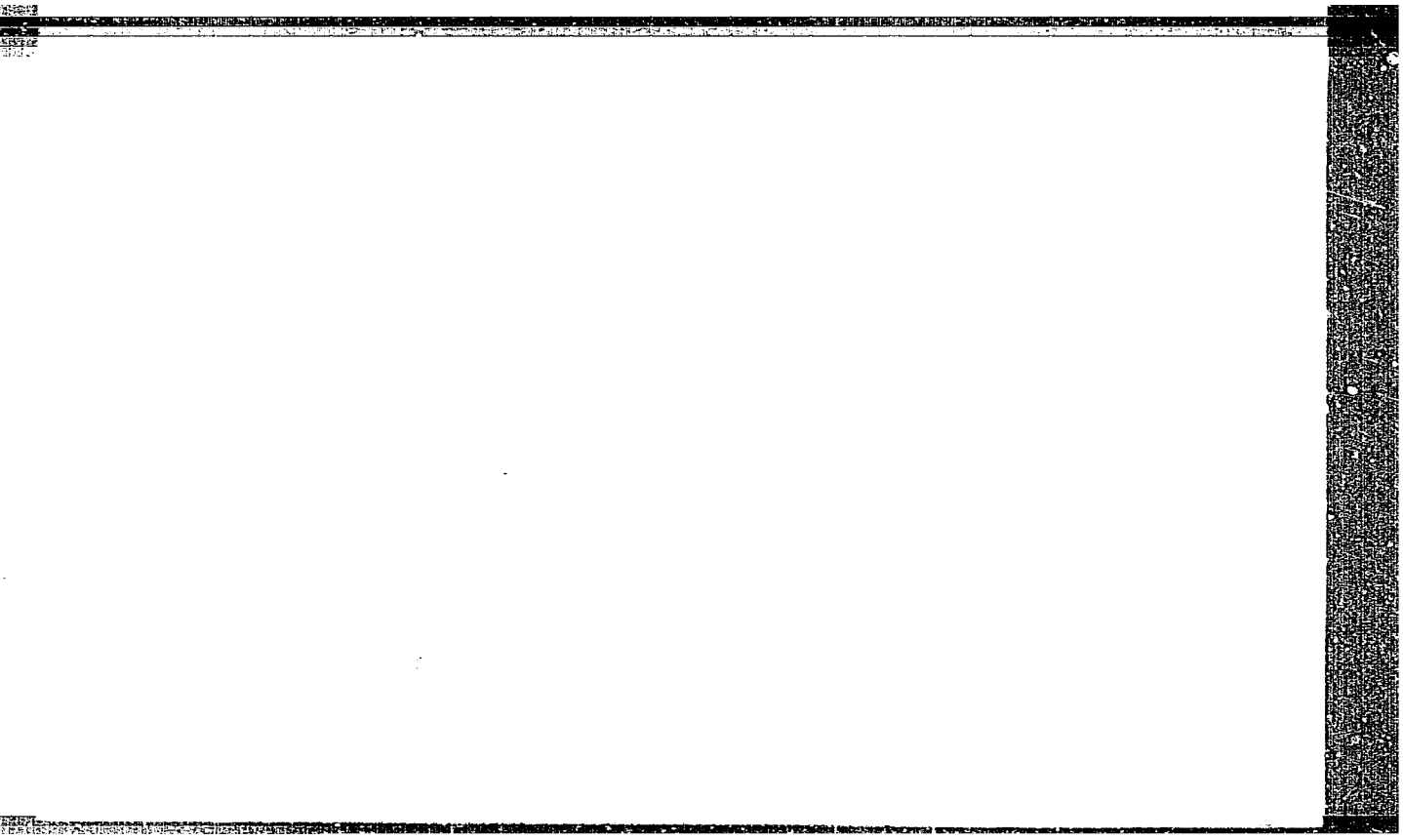
Dulin, V. A., Yu. A. Kazanskiy, and I. V. Shugar. Atomnaya energiya, v. 14, no. 4, Apr 1963, 404-405. S/089/63/014/004/011/019

The neutron spectra in water from an ~15 Mev neutron source have been measured at distances of 20 to 90 cm from the source, which was an $H^3(H^2, n)He^4$ reaction with deuteron energy of 400 Kev. A single-crystal fast-neutron scintillation spectrometer with γ-ray discrimination was used as a detector. The results obtained are presented in the form of histograms which can be used for determining the relaxation length for a group of neutrons with energy of 14 to 16 Mev. At distances of 30 to 60 and 60 to 90 cm, the relaxation length was found to be 15.0 ± 0.8 and 14.7 ± 0.9 cm, respectively, which is in good agreement with the results obtained previously with a $Cu^{63}(n, 2n)Cu^{62}$ indicator by B. I. Sinitsyn, [AS]

Card 1/1

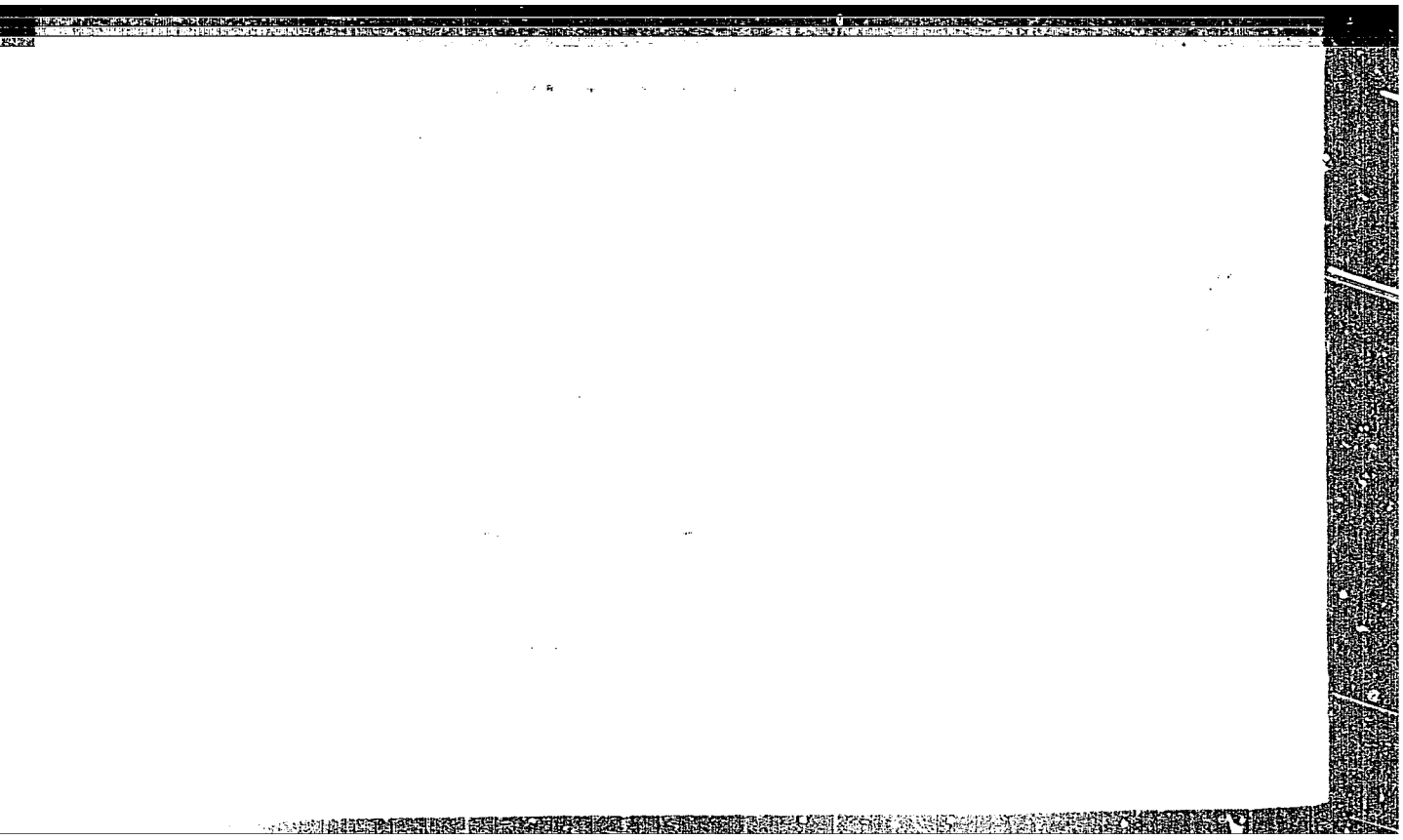




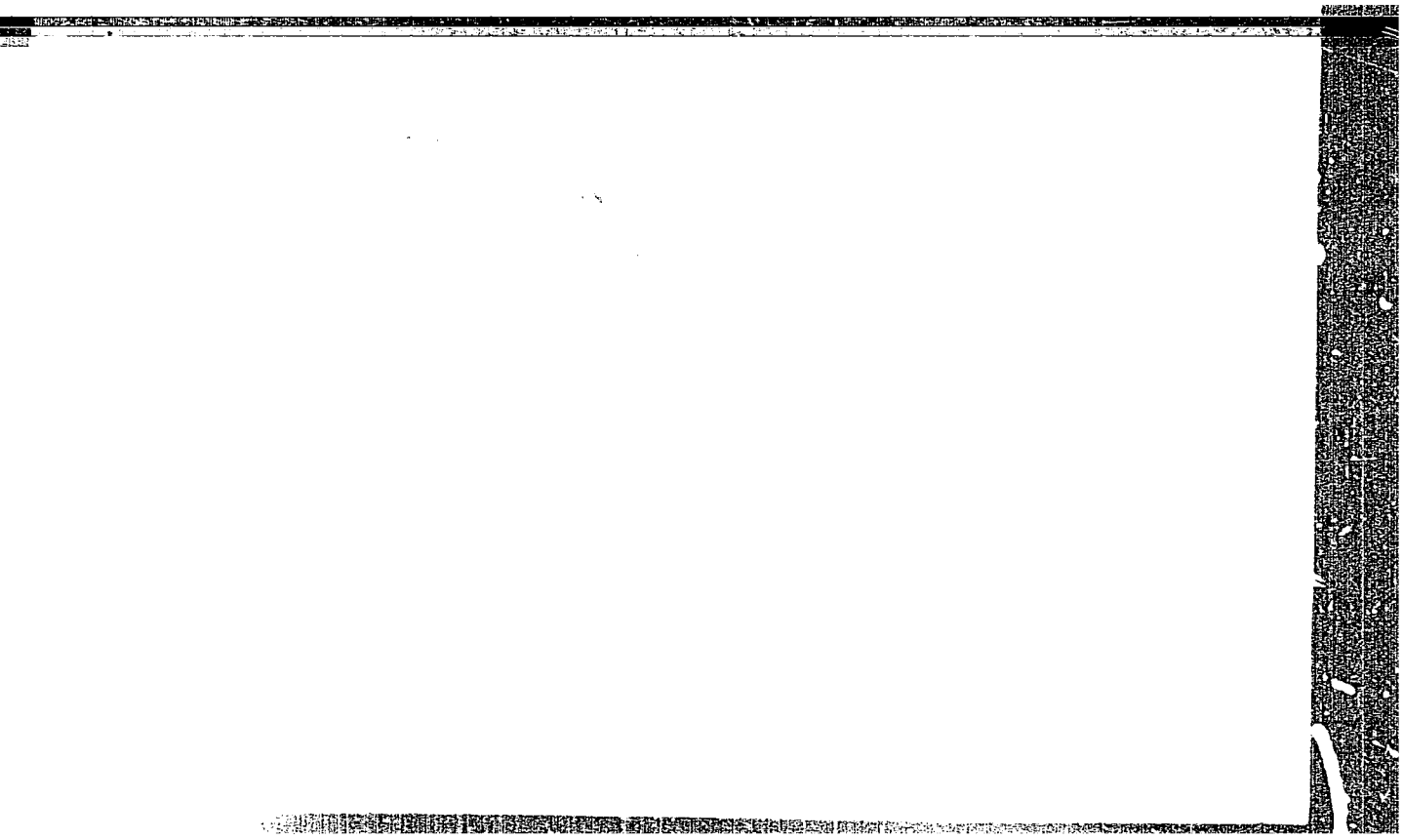


BELOV, S.P.; DULIN, V.A.; KAZANSKIY, Yu.A.; TSYPIN, S.G.

Angular distribution of 3 and 15 Mev. neutrons in beryllium.
Atom. energ. 18 no.1:67-68 Ja '65.
(MIRA 18:2)



APPROVED FOR RELEASE: Thursday, July 27, 2000 CIA-RDP86-00513R00041151(



L 1160-66 EWT(m)/EPF(n)-2/EWA(h)

ACCESSION NR: AT5023146 UR/2892/65/000/004/0031/0035

AUTHOR: Dvukhsherstnov, V. G., Dulin, V. A.

TITLE: Energy distribution of neutrons at the boundary of two media

SOURCE: Moscow Inzhenerno-fizicheskiy institut. Voprosy dozimetrii i zashchity ot izlucheniy, no. 4, 1965, 31-35

TOPIC TAGS: neutron energy distribution, boundary layer theory, fast neutron, radiation source, Monte Carlo method, water, graphite, iron, lead, aluminum, nickel

ABSTRACT: The article is devoted to the measurement of the energy distribution of neutrons from a point source of fast neutrons with average energies of 3.25 Mev at the boundary of a medium-water. Tests were made on materials of the following thicknesses: water (15 cm), graphite (20 cm), aluminum (10 cm), iron (12 and 15 cm), nickel (6 and 12 cm) and lead (12 cm). The neutron source was [illegible] reaction with a deuteron energy of [illegible] The measurements were [illegible] placed at the medium water boundary. Measurements of energy distribu-

Card 1/2

L 1160-66
ACCESSION NR: AT5023146

[illegible] was done with a monocrystal scintillation fast neutron spectrometer. A [illegible] shows the experimental energy distribution for water, graphite, iron, [illegible]minum, and nickel, as well as the energy distribution of neutrons in [illegible] graphite and iron, calculated by the method [illegible] for an isotropic [illegible] source of neutrons with energies of 3-4 Mev) and [illegible] Monte Carlo method [illegible] for a practically flat monoparallel neutron source with energies of 3 Mev. [illegible] art has: 2 figures

ASSOCIATION: None

SUBMITTED: 00 ENCL: 00 SUB CODE: NP

NR REF SOV: 001 OTHER: 005

Card 2/2 DP

[illegible]-66 EWT(m)/EWA(h)

[illegible]

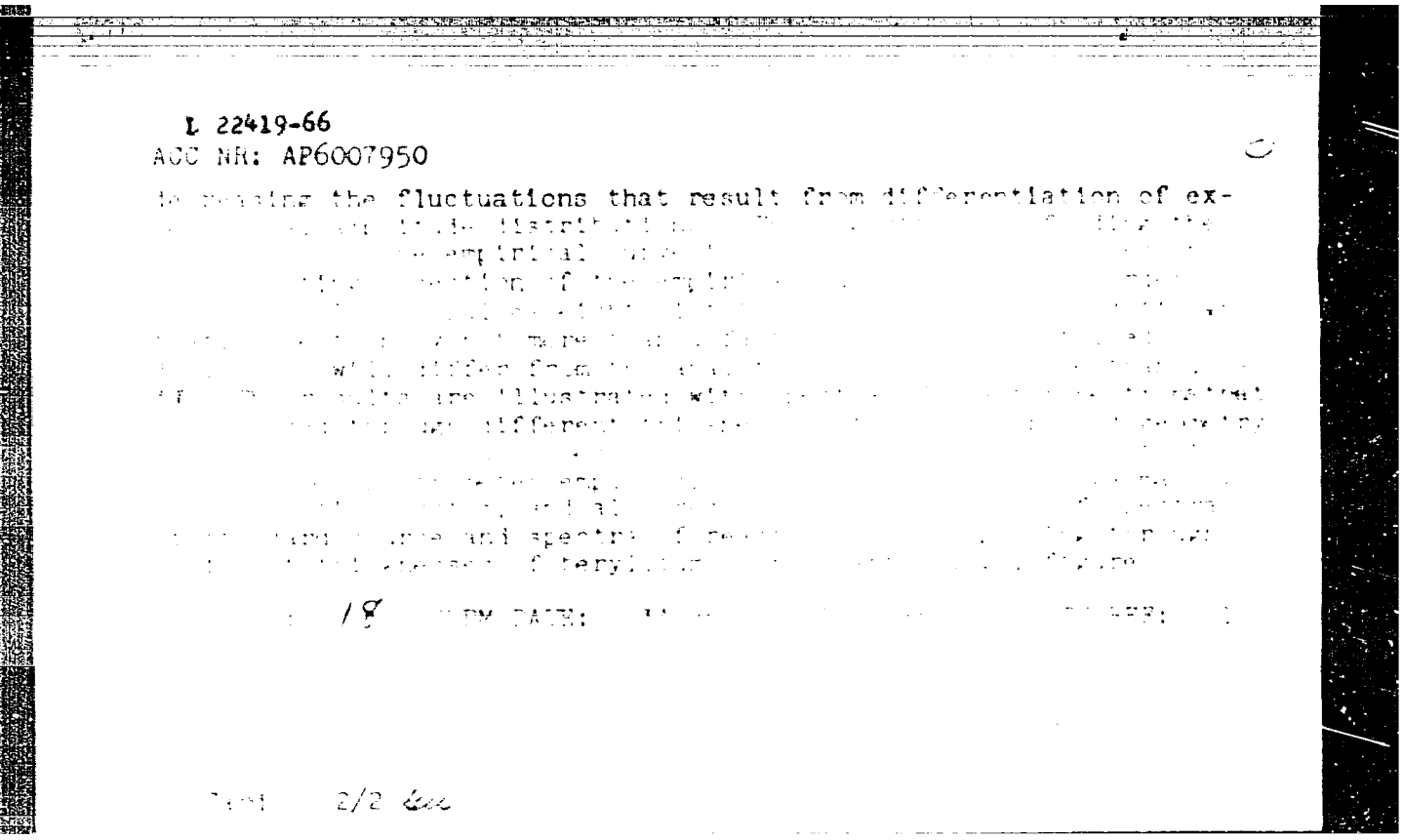
TITLE: Transformation of integral amplitude distributions into [illegible] energy spectra

SOURCE: Atomnaya energiya, v. 20, no. [illegible], 1966, 1[illegible]

TOPIC TAGS: neutron spectrum, neutron detector, scintillation detector, pulse height analyzer, nuclear reaction yield, iron, [illegible]

ABSTRACT: This is an abstract of article N[illegible] submitted to [illegible] but not published in full. [illegible] improve the [illegible] with which the neutron energy [illegible] is determined by differentiating the integral spectra of pulses from a scintillator. This is done by using a least-squares method of determining the derivative,

Card 1/2 UDC: 539:16.08:539.125.5



L 22419-66
ACC NR: AP6007950

to minimize the fluctuations that result from differentiation of ex-

2/2 Card

L 06993-67 EWT(m)/EWP(t)/ETI LJP(c) JD/WW/JG/JR
ACC NR: AP6021522 SOURCE CODE: UR/0089/66/020/006/0469/0473

AUTHOR: Goryachev, I. V.; Dulin, V. A.; Yermakov, S. M.; Kolyshenkova, V. V.; Suvorov, A. P.; Trykov, L. A.

ORG: none

TITLE: Angular distribution of fast neutrons behind iron shields

SOURCE: Atomnaya energiya, v. 20, no. 6, 1966, 469-473

TOPIC TAGS: neutron distribution, fast neutron, angular distribution, reactor shielding, iron

ABSTRACT: The authors have measured the angular and energy distributions of fast neutrons behind iron shields of 10 and 15 cm thickness. The results of the experiment are compared with calculations by the Monte Carlo method and with many-group calculations by the "transmission" matrix method in the $2P_7$ approximation. The results of the calculations show that the transmission of the shield depends strongly on the angular distribution of the incident radiation. The transmission measurements were made using an RIZ uranium-water reactor with a stainless steel reflector. The agreement of the experimental and the calculated data are found to

Card 1/2 UDC: 539.125.52

L 06993-67
ACC NR: AP6021522

be satisfactory both in absolute magnitude and in the form of the angular distributions. A study was also made of the difference in character of the spatial and angular distributions of fast neutrons from a point source in an infinite homogeneous medium and from a point source located at a plane barrier. The results show that the allowance for the thickness of the shield leads to a steeper fall off in the neutron flux than in the case of an infinite medium. Other differences between infinite and finite shields are also pointed out. The authors thank Yu. A. Kazanskiy for valuable advice and discussions. Orig. art. has: 5 figures and 1 formula.

SUB CODE: 18 SUBM DATE: 04Sep65/ ORIG REF: 013/ OTH REF: 004

Card 2/2 LC

L 05048-67 EWT(m) JR/GD

ACC NR: AT6027922 SOURCE CODE: UR/0000/66/000/000/0072/0073

39
37
B+1

AUTHOR: Dulin, V. A.; Kazanskiy, Yu. A.

ORG: None

TITLE: Angular distributions of fast neutrons in various environments

SOURCE: Voprosy fiziki zashchity reaktorov (Problems in physics of reactor shielding); sbornik statey, no. 2. Moscow, Atomizdat, 1966, 72-73

TOPIC TAGS: angular distribution, anisotropic medium, neutron energy distribution, fast neutron

ABSTRACT: The authors consider the angular energy distributions of fast neutrons under conditions of barrier geometry as a function of the atomic weight of the ambient medium, the thickness of the barrier and the energy and shape of the neutron source. For media which do not contain hydrogen, the angular distribution of the radiation within the solid angle $2\pi\sin\theta d\theta$ from an isotropic point source of neutrons with an energy of 3.4 Mev at angles of 20-70° is isotropic and practically independent of atomic weight and thickness of the medium (for a thickness of 1.5-5 times the mean free path) with an accuracy of 20-30%. As the energy of the neutron source is increased, the dosage in this solid angle begins to show angular anisotropy. Curves are given showing the angular distribution of fast neutrons with an energy above this threshold value. The results show that the angular distribution of fast neutron radiation for

L 05048-67

ACC NR: AT6027922

2

angles greater than 30° is ! .dependent of the form of the environment or its thickness and is not even affected by the energy and shape of the neutron source. The measurement error is less than 10%. It is possible that this conclusion will not be valid for a greater thickness and neutrons in the reactor spectrum. The authors thank S. G. Tsypin for useful consultation and V. G. Dvukhsherstnov for assistance in the work. Orig. art. has: 2 figures.

SUB CODE: 18,20,12/ SUBM DATE: 12Jan66/ ORIG REF: 003/ OTH REF: 001

FRIDLYAND, A.M., insh.; DULIN, V.D.; FELONIN, A.N.

Operation of powered units for changing mine cars during the construction of mines in Karaganda. Shakht. stroi. 7 no.12:21-25 D'63. (MIRA 17:5)

1. Trest Dolinskshakhtostroy (for Fridlyand).
2. Shakhtostroitel'noye upravleniye No.3 tresta Dolinskshakhtostroy (for Dulin, Felonin).

TERMAN, F.; PETTIT, J.M. ; DULIN , V.N.[translator] FROLKIN, V.T, redaktor; GESSEN, L.V., redaktor; GERASIMOVA, Ye.S., tekhnicheskiy redaktor

[Electronic measurements. Translated from the English] Izmeritel'naia tekhnika vaelektronike. Per.s angliiskogo V.N. Dulina. Pod red. V.T.Frolkina. Moskva, Izd-vo inostrannoi lit-ry 1955. 604 p. (MLRA 8:10)
(Electronic measurements)

L'YUIS, I. [Lewis, I.A.D.],; UELS, F. [Wells, F.H.],; DULIN, V.N., [translator],; ABRAMSON, I.S., red.; MOOILEVSKIY, A.N., red.; TELESNIN, N.L., red.; SMIRNOVA, N.I., tekhn. red.

[Millimicrosecond pulse techniques] Millimikrosekundnaia impul'snaia tekhnika. Moskva, Izd-vo inostr. lit-ry, 1956. 367 p. [Translated from the English]. (MIRA 11:12)

(Pulse techniques(Electronics))
(Microwaves)

DULIN, V. N.

KUZOVKOV, Nikolay Timofeyevich; DOBROGURSKIY, S.O., doktor tekhn.nauk, prof., retsenzent; DULIN, V.N., kand.tekhn.nauk, red.; PETROVA, I.A., izdatel'skiy red.; KOZHIN, V.P., tekhn.red.

[The theory of automatic control based on frequency methods] Teoriia avtomaticheskogo regulirovaniia, osnovannaia na chastotnykh metodakh. Moskva, Gos.izd-vo obor.promyshl., 1957. 245 p. ------[Forms and nomograms] Shablony i nomogrammy. 1957. 25 graphs. (MIRA 11:2)

(Automatic control)

DULIN, V.N.

KRICHEVSKIY, Yevgeniy Samoylovich; FEDOROVICH, Leonid Grigor'yevich; FRISOV, Vladimir Fedorovich; VERTSNER, V.N., kand. fiz.-mat. nauk, retsenzent; KHUGER, M.Ya., insh., retsenzent; SHOSHIN, I.A., insh., retsenzent; SOBOLEV, S.F., insh., retsenzent; DULIN, V.N., kand. tekhn. nauk, red.; BOGOMOLOVA, M.F., red. izd-va; PUKHLIKOVA, N.A., tekhn. red.

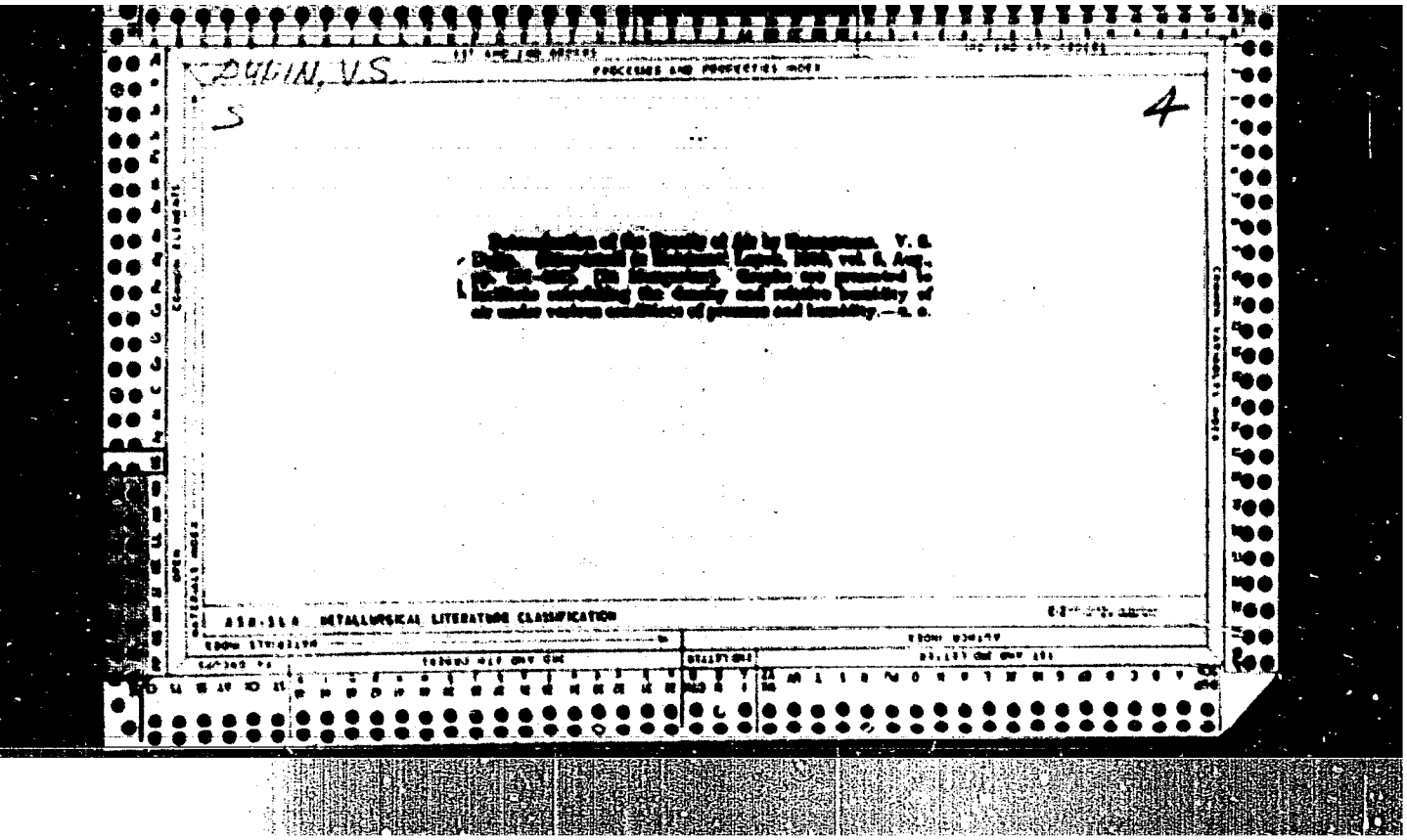
[Electrical equipment in optical and mechanical instruments] Elektrooborudovanie optiko-mekhanicheskikh priborov. Moskva, Gos. izd-vo obor. promyshl., 1958. 467 p. (MIRA 11:7)
(Electronic apparatus and appliances)
(Electric apparatus and appliances)

FROLKIN, Viktor Tikhonovich; DULIN, V.N., red.; IVANUSHKO, M.D., red.; SMUROV, B.V., tekhn.red.

[Pulse techniques] Impul'snaia tekhnika. Pod red. V.N.Dulina. Moskva, Izd-vo "Sovetskoe radio," 1960. 359 p. (MIRA 13:5)
(Pulse techniques (Electronics))

DULIN, Viktor Nikolayevich; GRIGOR'YEV, B.S., red.; FRIDKIN, A.M., tekhn. red.

[Electronic and ionic devices] Elektronnye i ionnye pribory. Moskva, Gosenergoizdat, 1963. 543 p.
(MIRA 17:1)



RASKIN, I. A., Eng.; DULIN, V. S.

Mine Ventilator

New axial mine ventilator of the type VU. UGOL' 28, No. 4, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

DULIN, V.S., kandidat tekhnicheskikh nauk.

Review of R.M.Khadzhikov's book, "Collection of examples and problems in mine mechanics." Ugol' 29 no.1:47-48 Ja '54. (MLRA 7:1)
(Mining engineering) (Khadzhikov, R.M.)

DULIN, V.S., kandidat tekhnicheskikh nauk.

Book by Candidate of Technical Sciences A.A.Ostrometskii "Studies in the history of Russian mining" reviewed by V.S.Dulin. Ugol' 29 no.7:46-48 Jl '54. (MLRA 7:7)
(Mining engineering--History) (Ostrometskii, A.A.)

DULIN, V.S., dotsent.

Some problems of further development of mine fan design. Gor. Zhur. no.10:46-48 O '56. (MLRA 9:12)

1. Donetskiy industrial'nyy institut imeni N.S.Khrushcheva. (Mine ventilation) (Fans, Mechanical)

Pak, V.S.

PAK, V.S., professor, redaktor; BORISENKO, K.S., kandidat tekhnicheskikh nauk, dotsent, redaktor; [redacted], kandidat tekhnicheskikh nauk, dotsent, redaktor; RUBEL', A.K., otvetstvennyy redaktor; D'YAKOVA, G.B., redaktor izdatel'stva; ANDREYEV, G.G., tekhnicheskiy redaktor; SABITOV, A., tekhnicheskiy redaktor. (MLRA 10:11)

[Mine fans and ventilation equipment; proceedings of a conference on mine fan manufacturing] Shakhtnye ventiliatory i ventiliaternye ustanovki; trudy konferentsii po shakhtnomu ventiliatorostroeniiu, g. Stalino, iiun' 1955 g. Moskva, Ugletekhizdat, 1957. 142 p.

1. Nauchno-tekhnicheskoye obshchestvo gornyakov. Stalinskoye oblastnoye otdeleniye. 2. Deystvitel'nyy chlen AN USSR (for Pak).
(Mine ventilation)

DULIN, V.S.

26

PHASE I BOOK EXPLOITATION SOV/5473

Gornoye delo; entsiklopedicheskiy spravochnik. t. 8: Statsionarnoye elektromekhanicheskoye oborudovaniye. Elektrosnabzheniye shakht (Mining Industry; an Encyclopedic Handbook. v. 8: Stationary Electromechanical Equipment. Electric Power Supply to Mines) Moscow, Gosgortekhizdat, 1960. 784 p. Errata slip inserted. 18,500 copies printed.

Chief Ed.: A. M. Terpigorev (Deceased); Members of the Editorial Board: A. I. Baranov, F. A. Barabanov (Deceased), A. A. Boyko, V. K. Buchnev, A. N. Zaytsev; Deputy Chief Eds.: L. K. Kit and N. V. Mel'nikov; I. N. Plaksin, N. M. Pokrovskiy, A. A. Skochinskiy (Deceased), A. O. Spivakovskiy, L. K. Stanchenko, A. P. Sudoplatov, A. V. Topchiyev, S. V. Troyanskiy, A. K. Kharchenko, L. D. Shevyakov and M. A. Shchedrin; Editorial Board for this volume: Resp. Ed.: F. A. Barabanov; Deputy Resp. Ed.: Z. M. Melamed; N. A. Arzamasov, G. M. Yelanchik, V. K. Yefremov, B. L. Zasadych, L. M. Zhumakhov, N. A. Letov, P. P. Nesterov, I. A. Rabinovich, K. I. Skorkin, and V. A. Sumchenko; Authors: G. A.

Card 1/18

Mining Industry (Cont.) SOV/5473

Babak, Candidate of Technical Sciences, V. D. Belyy, Professor, Doctor of Technical Sciences, K. S. Borisenko, Candidate of Technical Sciences, A. G. Borumenskiy, Candidate of Technical Sciences, I. V. Brusilovskiy, Candidate of Technical Sciences, A. R. Bushel', Candidate of Technical Sciences, V. P. Bukhgol'ts, Engineer, M. N. Vasilevskiy, Candidate of Technical Sciences, A. N. Vas'kovskiy, Engineer, B. N. Vlasenko, Engineer, I. Ya. Gershikov, Engineer, V. G. Geyer, Professor, Doctor of Technical Sciences, A. D. Dimashko, Engineer, V. S. Dulin, Candidate of Technical Sciences, I. L. Lokshin, Engineer, B. M. Melamed, Engineer, Yu. A. Mikheyev, Engineer, V. P. Morozov, Engineer, M. I. Mushkatin, Engineer, V. S. Pak, Academician, I. M. Perskaya, Engineer, N. M. Rusanov, Candidate of Technical Sciences, G. P. Savel'yev, Candidate of Technical Sciences, Ya. M. Smorodinskiy, Candidate of Technical Sciences, K. A. Ushakov, Honored Scientist and Technologist, Professor, Doctor of Technical Sciences, B. M. Furmanov, Engineer, and N. N. Chernavkin, Engineer. Eds.: Ya. M. Drozdov, Engineer, B. I. Zasadych,

Card 2/16

Mining Industry (Cont.) SOV/5473

Candidate of Technical Sciences, N. S. Karpyshev, Candidate of Technical Sciences, N. A. Letov, Candidate of Technical Sciences, Z. M. Melamed, Candidate of Technical Sciences, Yu. A. Mikheyev, Engineer, V. P. Morozov, Engineer, V. I. Polikovskiy, Professor, Doctor of Technical Sciences, I. A. Rabinovich, Engineer, M. S. Rabinovich, Candidate of Technical Sciences, I. A. Raskin, Engineer, V. S. Tulin, Engineer, S. Ye. Unigovskiy, Engineer, K. A. Ushakov, Honored Scientist and Technologist, Professor, Doctor of Technical Sciences, M. M. Shemakhanov, Candidate of Technical Sciences, P. F. Shishkov, Candidate of Technical Sciences, and V. B. Yablonovskiy, Engineer; Eds. of Publishing House: N. A. Arzamasov and T. I. Rybal'nik; Tech. Ed.: V. L. Prozorovskaya and M. A. Kondrat'yeva.

PURPOSE: This handbook is intended for mining and mechanical engineers as well as for other skilled personnel of the mining industry concerned with the handling and operation of various installations and equipment used in mines.

Card 3/16

Mining Industry (Cont.) SOV/5473

COVERAGE: Volume VIII of the mining handbook contains detailed information on mine hoisting installations, machines and equipment, mine ventilation units, duct systems, dewatering facilities, various types of pumps, pump meters, pumping stations, and the automatic remote control of these units. The handbook also describes and explains the operation of the air compression units and compressors. Heat-generating and heat-supply equipment of mines is described, as are the electric power supply systems and other electrical equipment such as transformers, power distribution systems, and grounding devices. Telephone communication and signaling systems used in mines are also treated. No personalities are mentioned. Each part of the handbook is accompanied by references, mostly Soviet.

TABLE OF CONTENTS [Abridged]:

PART I. MINE HOISTING UNITS

Card 4/16

PART II. MINE FAN INSTALLATIONS

MATVEYEV, M.T.; DULIN, V.S.

Introduction of new designs of mine fans. Ugol' Ukr. no.6: 46-47 Je '60. (MIRA 13:7)

1. Glavnyy spetsialist Gosudarstvennogo nauchno-tekhnicheskogo komiteta USSR (for Matveyev). 2. Rukovoditel' brigady Gosudarstvennogo nauchno-tekhnicheskogo komiteta USSR (for Dulin).
(Mine ventilation)
(Fans, Mechanical)

DULIN, V.S., kand.tekhn.nauk; KOVALEVSKAYA, V.I., inzh.

Centrifugal mine fans with a two-way intake. Sbor. trud. Inst. gor. dela AN URSR no.12:47-58 '61. (MIRA 15:11)
(Fans, Mechanical)

DULIN, V.S., dotsent, kand.tekhn.nauk

Nomogram for determining the specific weight of a methane-air mixture. Ugol' 37 no.5:45-46 My '62. (MIRA 15:6)

1. Donetskiy politekhnicheskiy institut.
(Mine gases)

ALIFEROV, V.P., inzh.; LAVRIK, V.G., inzh.; DULIN, V.S., kand. tekhn. nauk; SKLIVRA, A.A., kand. tekhn. nauk

Characteristics of water ring vacuum pumps used in degasing coal mines. Ugol' 38 no.9:54 S '63. (MIRA 16:11)

1. Donetskiy politekhnicheskiy institut.

CHENTSOV, I.V.; DULINA, R.M.; DOVGAYLO, V.A.

New method of determining shrinkage after wetting. Tekst.prom. 18 no.10:47-48 O '58. (MIRA 11:11)

1. Glavnyy insh. Minskogo tonkosukonnogo kombinata (for Chentsov). 2. Zavedyushchaya laboratoriyey Minskogo tonkosukonnogo kombinata (for Dulina). 3. Nachal'nik Otdela tekhnicheskogo kontrolya Minskogo tonkosukonnogo kombinata (for Dovgaylo).
(Textile fabrics--Testing)

DULINIEC, M.

We are fighting for a modern and fast merchant marine.

p. 3 (Morze, Vol. 12, no. 6, June 1957. Warszawa, Poland)

Monthly Index of East European Accessions (EEAI) IC. Vol. 7, no. 2, February 1958

DULINIEC, W.

Two statutes, one aim; a polemic article on the margin of the formation of agricultural circles.

p. 4 (Rolink Spoldzielca. Vol. 9 (i.e. 10) no. 3, Jan. 1957. Warszawa, Poland)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2, February 1958

DULINIEC, W.

What should be changed in the purchase of grein?

p. 5 (Rolink Spoldzielca. Vol. 9 (i.e. 10) no. 2, Jan. 1957. Warszaw, Poland)

Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 2,
February 1958

DULINIEC, W.

"The subject of the discussion of the countil of the Warszawa Voivodeship Administration of Township Cooperatives."

p. 1 (Rolnik Spoldzielca) Vol. 10, no. 3, Jan. 1958
Warsaw, Poland

SO: Monthly Index of East European Accessions (EEAI) LC. Vol. 7, no. 4, April 1958

DULININ, M. M.

Dulinin, M. M. and Zaverina, E. D., Sorption and structure of active carbons. III. The change of the character of porousness of carbon and the sorption of water vapor. P. 57.

Isotherms of sorption and desorption of water vapors on carbon, produced from sugar, which had adsorbed various amounts of benzene vapor were studied. It is shown that the blocking of the most active sections of the surface of the carbon by benzene leads to a shift of the sorption isotherms into the region of higher relative pressures, analogous to the shift observed during progressive activation of carbon. These results agree with the expressed hypothesis about the nature of sorption of water vapors.

May 19, 1948

SO: Journal of Physical Chemistry (USSR) 23, No. 1 (1949)

DULINSKI, Wladyslaw; KOHSLING, Zofia

The elimination of hydrogen sulfide from gases. Wiad naft 6 no.2: 29-30 F '60. (EEAI 9:10)
(Gases) (Hydrogen sulfide)

DULINSKI, Wladyslaw, mgr inz.; SIEMEK, Jakub, mgr inz.

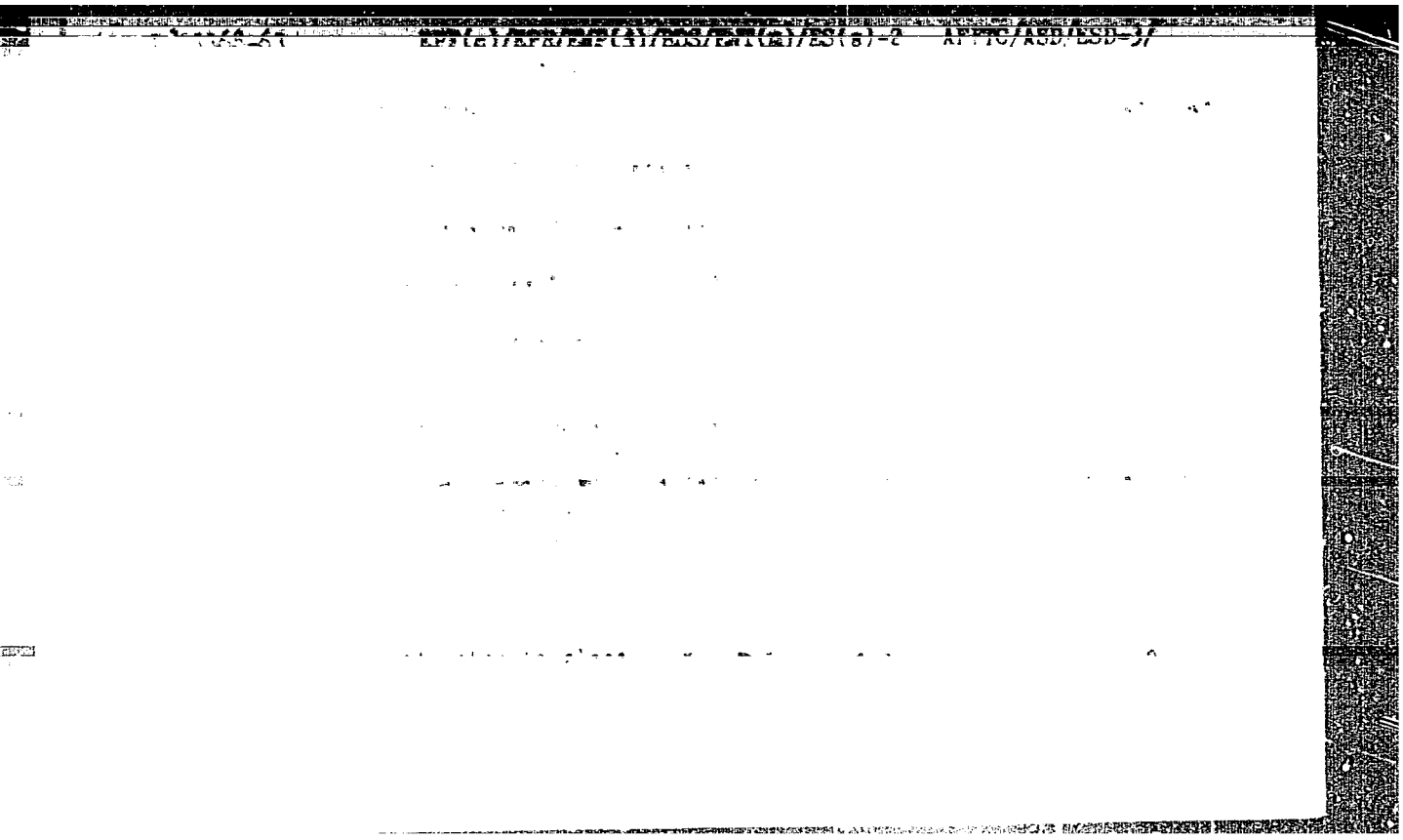
Inversion curves for natural gas. Nafta Pol 18 no.12:331-333 D '62.

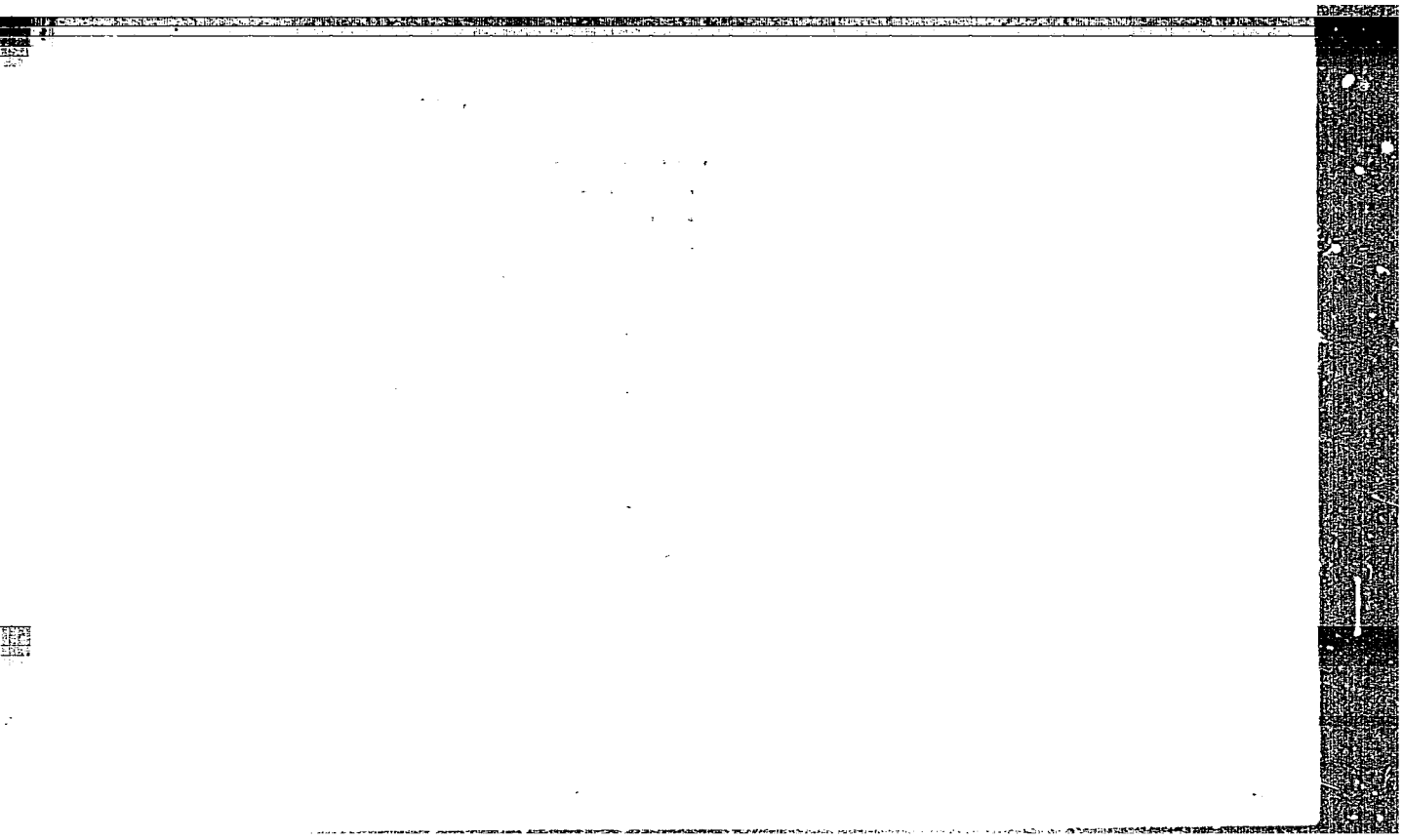
1. Akademia Gorniczo-Hutnicza, Krakow.

WILK, Zdzislaw, prof. mgr ins.; DULINSKI, Wladyslaw, mgr ins.; KOHSLING, Zofia, mgr; SIEMEK, Jakub, mgr ins.

Laboratory studies on winning sulfur through boreholes. Nafta Pol 19 no.4:89-93 Ap '63.

1, Akademia Gorniczo-Hutnicza, Krakow.

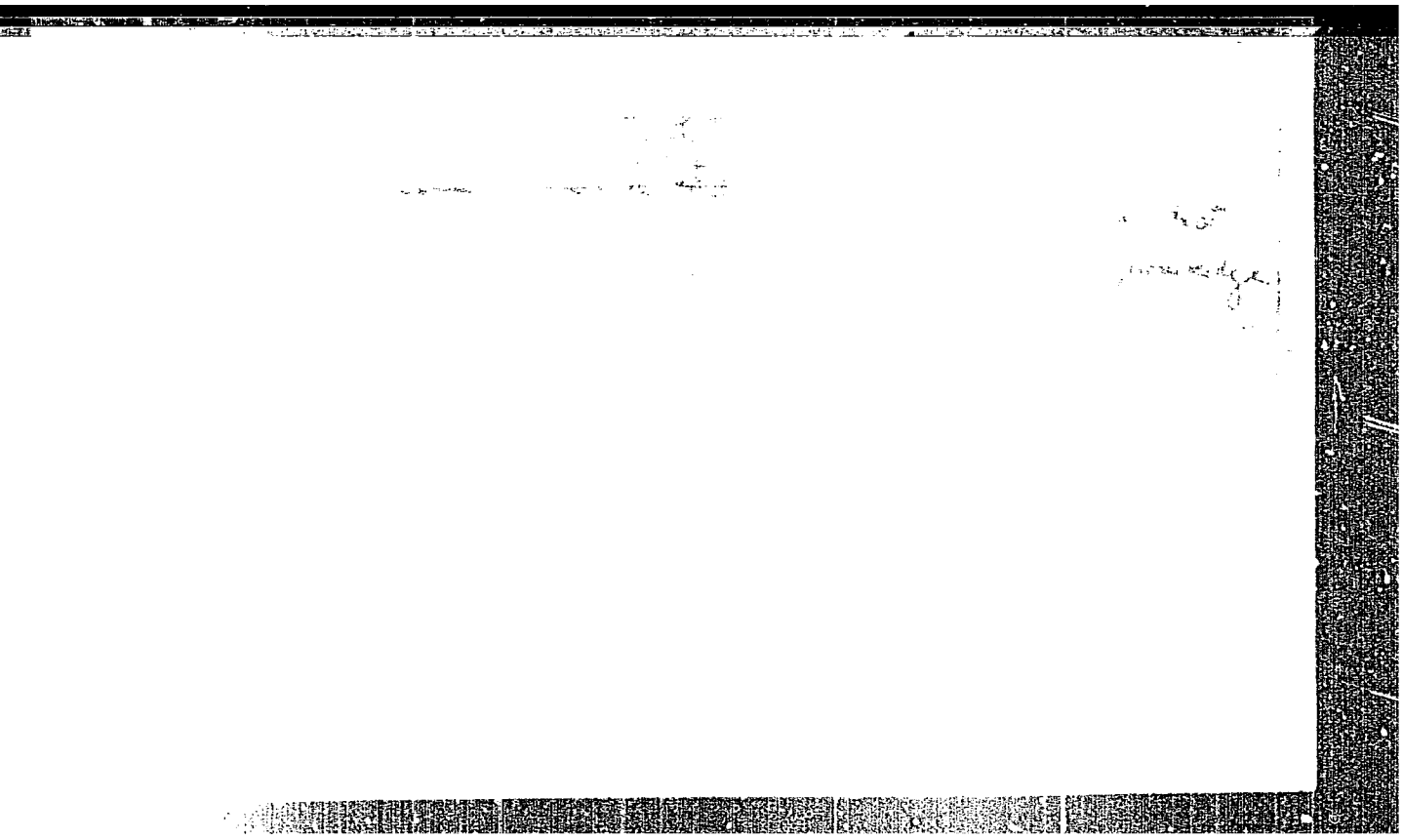


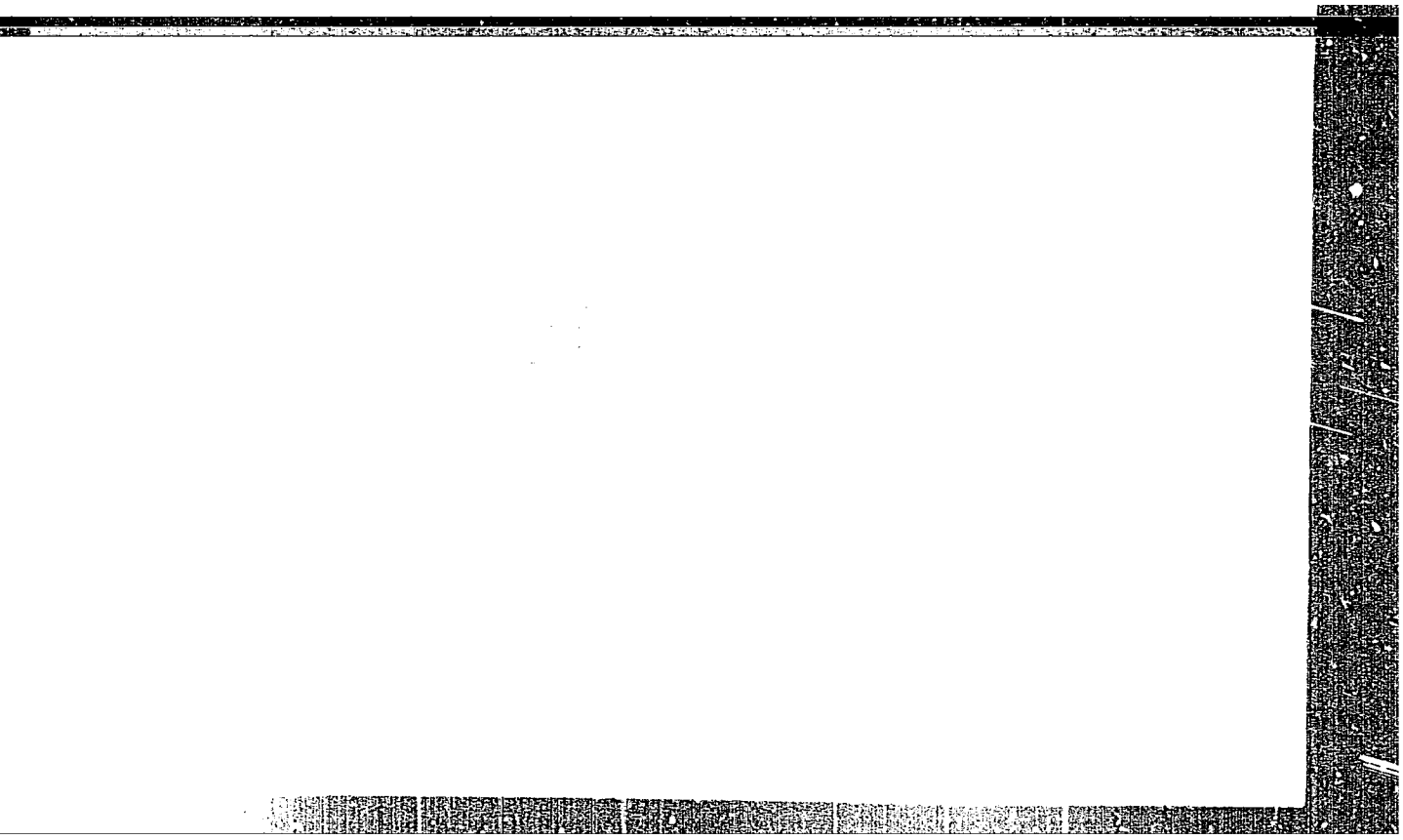


DULITSKAYA, K. A.

"Vapor Pressure of Binary Systems. I." Zhur. obshch. khim., No.15, pp. 9-21, (English summary pp. 22-36), 1945.

Lab. Chem. Thermodynamics, Moscow State U.





TOLSTOPYATOVA, A.A.; YUY TSE-TSYUAN' [Yu Ch'i-ch'uan]; DULITSKAYA, K.A.

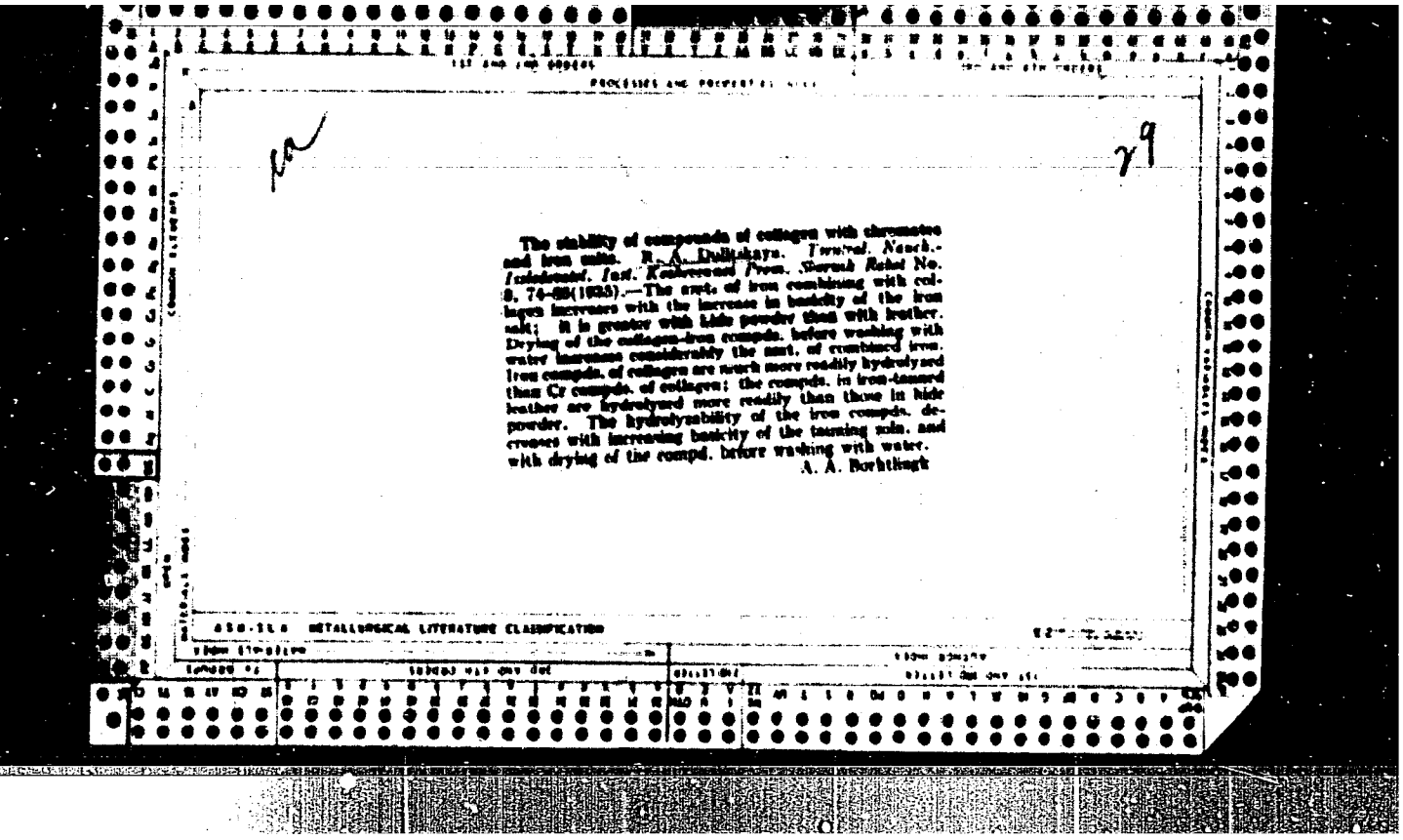
Catalytic properties of neodymium oxide in the reactions of dehydrogenation of tetralin. Izv. AN SSSR, Ser. khim. no.12: 2095-2100 D '63. (MIRA 17:1)

1. Institut organicheskoy khimii im. N.D. Zelinskogo AN SSSR.

ZAYDLER, Ya.I.; DULITSKAYA, R.A.

Some characteristics of blood coagulation in frogs. Fiziol.zhur. 47 no.3:336-340 Mr '61. (MIRA 14:5)

1. From the Pharmacology Chair, the Pharmaceutical Division of the Sechenov 1st Medical Institute, Moscow.
(BLOOD—COAGULATION)



The stability of compounds of collagen with chromates and iron salts. R. A. Dulitskaya. *Izvestiya Nauch.-Issledovatel. Inst. Kozhevennoi Prom. Sbornik Rabot No.* 3, 74-88(1935).—The amt. of iron combining with collagen increases with the increase in basicity of the iron salt; it is greater with hide powder than with leather. Drying of the collagen-iron compds. before washing with water increases considerably the amt. of combined iron. Iron compds. of collagen are much more readily hydrolyzed than Cr compds. of collagen; the compds. in iron-tanned leather are hydrolyzed more readily than those in hide powder. The hydrolyzability of the iron compds. decreases with increasing basicity of the tanning soln. and with drying of the compd. before washing with water.

A. A. Berkhingk

CA

29

The structure and physicochemical properties of gelatin gels. R. A. Dukhskaya and S. I. Sokolov. *Tsentral. Nauch.-Issledovatel. Inst. Kozhevennoi Prom., Sbornik i Phys.-Mekhan. Svoistva Kozhi, Kollagena i Promezhut. ... Tekhnologii, Sbornik Rabot Fiz.-Khim. Otdela TsNIKP*, 1937, [illegible]-40.—The differences in properties of readily sol. and difficultly sol. fractions of gelatin are mainly physical, not chem. The mech. properties of investigated gelatin films approached those of rubber.

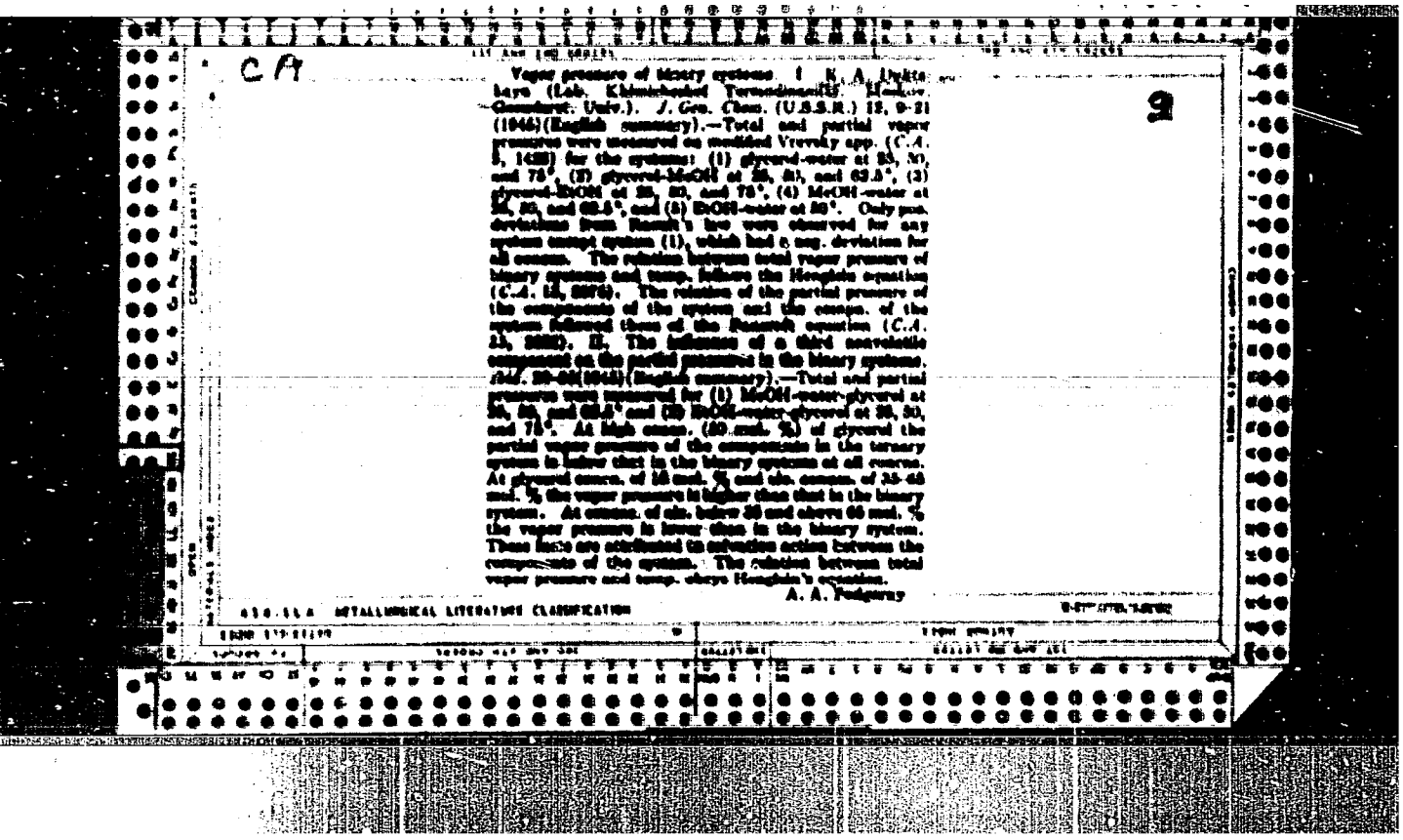
The structure and mechanical properties of collagen fibers. A. L. Zakhin and S. I. Sokolov. *Ibid.* 141-61.—The mech. properties of gelatin, a middle layer of corium of skin, hide and collagen fibers prepd. from the upper part of corium of a 6-year bull were investigated. The structural change in the collagen fibers after tanning. *Ibid.* 162-80.—Samples of collagen fibers were tanned with various tanning agents. The changes indicate that the tanning agent reacts chemically with active groups of side chains of collagen.

A. A. Podgorny

Sole leather without chestnut. D. Jordan Lloyd. *Leather World* 33, 38-9(1941).—American chestnut ext. (I) differs considerably from the European variety (II), and cannot replace the latter, now unobtainable, without modification of the blend. In general, I has a higher pH and buffer value, and a lower tan/nontan ratio than II. Satisfactory sole leather can be made without the use of either I or II by substituting suitably balanced blends of materials still readily available.

J. H. Highberger

ASB-SLA METALLURGICAL LITERATURE CLASSIFICATION

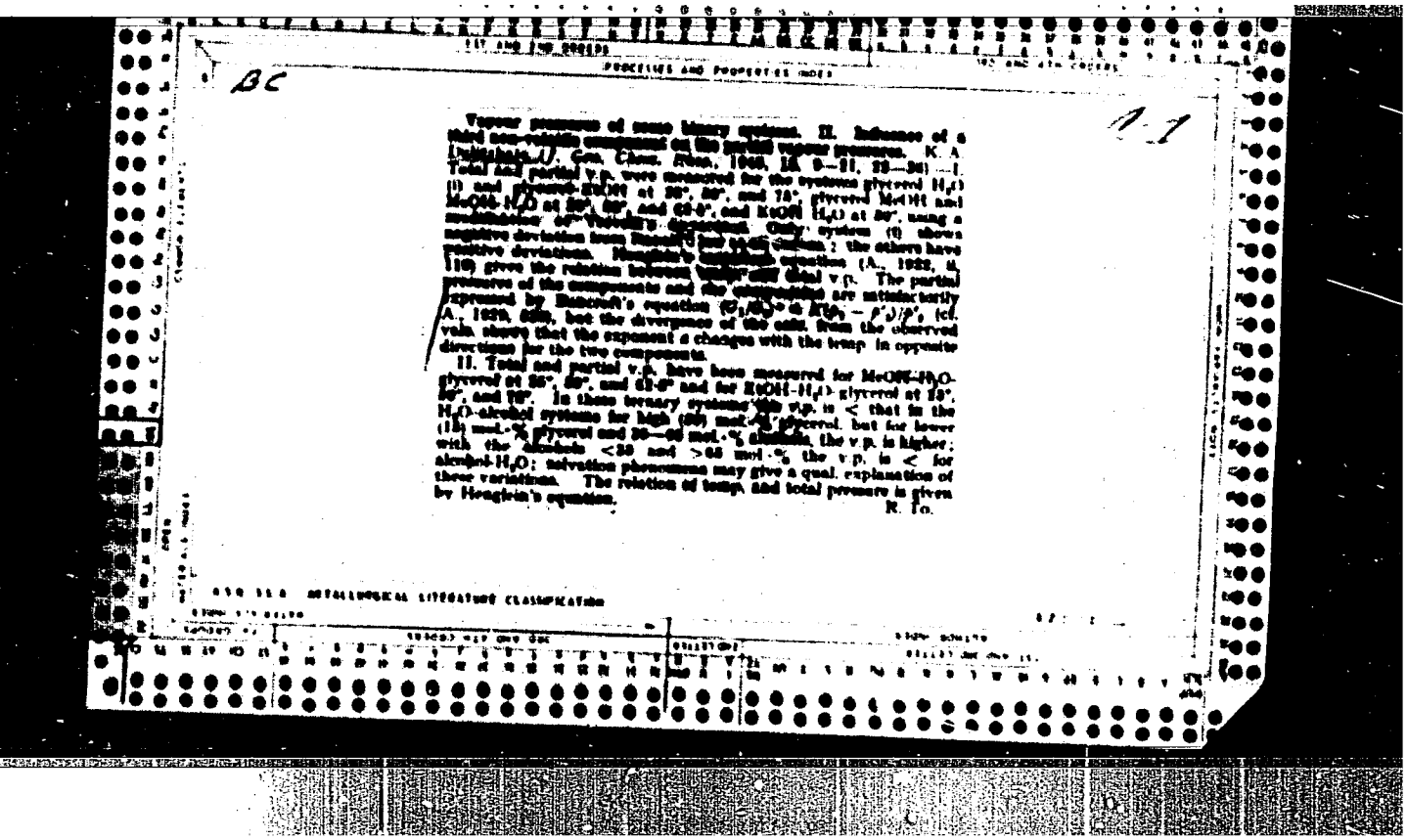


CA

2

Vapor pressure of binary systems. I. K. A. Pukte Lave (Lab. Khimicheskoi Termodinamiki, Moskov. Gosudarst. Univ.). *J. Gen. Chem.* (U.S.S.R.) 12, 9-21 (1946) (English summary).—Total and partial vapor pressures were measured on modified Vreveky app. (*C.A.* 3, 1438) for the systems: (1) glycerol-water at 25, 50, and 75°, (2) glycerol-MeOH at 25, 50, and 65.5°, (3) glycerol-EtOH at 25, 50, and 75°, (4) MeOH-water at 25, 50, and 65.5°, and (5) EtOH-water at 50°. Only pos. deviations from Raoult's law were observed for any system except system (1), which had a neg. deviation for all concns. The relation between total vapor pressure of binary systems and temp. follows the Hougbin equation (*C.A.* 18, 2076). The relation of the partial pressure of the components of the system and the concn. of the system followed those of the Raoult equation (*C.A.* 13, 2080). II. The influence of a third nonvolatile component on the partial pressures in the binary systems. *Ibid.* 39-46 (1946) (English summary).—Total and partial pressures were measured for (1) MeOH-water-glycerol at 25, 50, and 65.5° and (2) EtOH-water-glycerol at 25, 50, and 75°. At high concns. (60 mol. %) of glycerol the partial vapor pressure of the components in the ternary system is lower than in the binary systems at all concns. At glycerol concns. of 15 mol. % and the concns. of 25-45 mol. % the vapor pressure is higher than that in the binary system. At concns. of alc. below 25 and above 60 mol. % the vapor pressure is lower than in the binary system. These facts are attributed to salvation action between the components of the system. The relation between total vapor pressure and temp. obeys Hougbin's equation.

A. A. Podgurny



BC

Vapour pressures of some binary systems. II. Influence of a third non-volatile component on the partial vapour pressures. K. A. [illegible]. J. Gen. Chem. Russ., 1940, 10, 9—11, 23—30; cf. I. Total and partial v.p. were measured for the systems glycerol-H_2O (I) and glycerol-KOAc at 20°, 30°, and 75°, glycerol-MeOH-H_2O at 20°, 30°, and 60.6°, and KOAc-H_2O at 30°, using a modification of Tschelin's apparatus. Only system (I) shows negative deviations from Raoult's law [illegible]; the others have positive deviations. [illegible] equation (A., 1922, ii, 119) gives the relation between vapour and total v.p. The partial pressures of the components and the compounds are satisfactorily represented by Bancroft's equation $(P_1/P_1^0)^n = K(P_2 - P')/P'$, (cf. A., 1929, 688), but the divergence of the calc. from the observed vals. shows that the exponent n changes with the temp. in opposite directions for the two components.

II. Total and partial v.p. have been measured for MeOH-H_2O-glycerol at 20°, 30°, and 60.6° and for KOAc-H_2O-glycerol at 15°, 30°, and 75°. In these ternary systems the v.p. is < that in the H_2O-alcohol systems for high (60) mol.-% glycerol, but for lower (15) mol.-% glycerol and 20—60 mol.-% alcohols, the v.p. is higher; with the alcohols <20 and >60 mol.-% the v.p. is < for alcohol-H_2O; solvation phenomena may give a qual. explanation of these variations. The relation of temp. and total pressure is given by Hougkin's equation.

R. To.

YELEN'KIY, L.I.; DULITSKAYA, E.A.; YEYGES, Ye.G.

Correlation between tensile strength and the angle of inclination of the macromolecular chains in cotton fibers. Khim. i Fiz.-Khim. Vysokomolekul. Soedineniy, Doklady 7-oy Konf. Vysokomolekul. Soedineniyam '52, 250-4. (CA 47 no.18:9609 '53) (MLRA 5:7)

DULITSKAYA, R. A.

with V. I. Kasatochkin "Examined kinetics and thermodynamics of renaturation under pressure"

report presented at the 10th All-Union Conf. on Highly Molecular Compounds, Biologically Active Polymer Compounds, Moscow, 11-13 June 1958. (Vest. Ak Nauk SSSR, 1958, No. 9, pp. 111-113)

[illegible]BARIC, D.

Air pollution in [illegible]. Higijena 16 no.1:[illegible]